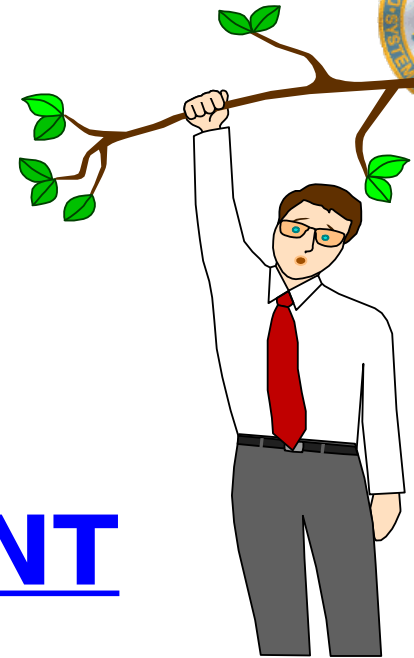
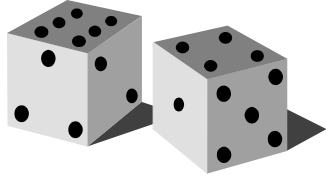




RISK MANAGEMENT for PEO **National Security Personnel** **System**

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DAU Ft. Belvoir
John.bennett@dau.mil
703.805.4993**

RISK



MANAGEMENT

BOTTOM LINE UP FRONT

- **Essential Part of Program Management**
- **Includes both Opportunities & Risk Events**
- **Risk Events must be Identified, Assessed, Handled & Monitored**
- **Risk Events Are Classified As LOW, MODERATE, or HIGH Depending on PROBABILITY of Occurrence and SEVERITY OF CONSEQUENCES**
- **High & Moderate Risks Must be Handled**

Risk Management must be integrated into the organization's routine processes



Risk Management

Two Components - Opportunities & Risk Events

Both have probabilities and outcomes

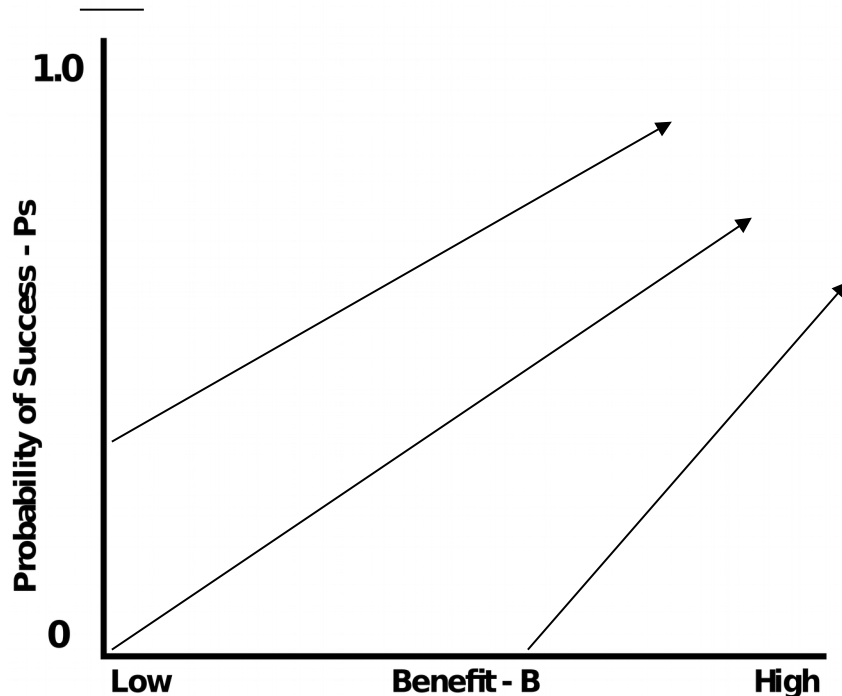
Executive Level = balanced view, big picture, risk-based strategic planning and decisions

“Worker Bees” main tasks = identifying and handling (mitigating) risk events



Managing Risk

“Opportunities are Good!”



Opportunity:

1. A favorable or advantageous combination or circumstances; suitable occasion or time.

2. A chance for progression and advancement.

Considerations:

1. Is the opportunity beneficial?
2. Is the opportunity doable?
3. Is the benefit worth the cost and risk?

Manage so as to enhance the high benefit and high probability!



Managing Risk

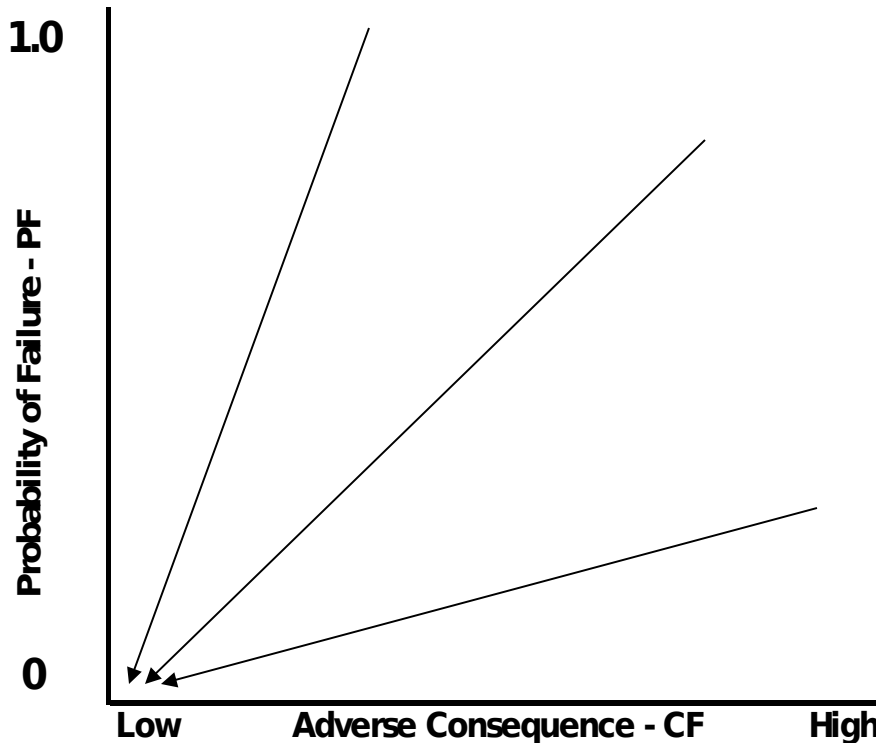
“Risks are bad!”

Risk:

1. The possibility of suffering harm or loss.
(potential problem)
2. A factor, element, or course involving uncertain danger.

Considerations:

1. What can be done to eliminate or reduce the risk?
2. What other areas can potentially be affected by the risk?
3. Is the risk worth the benefit?



Manage so as to move probability and consequence (impact) toward zero!

OPPORTUNITIES & RISKS



		Opportunity				Risk				
Probability	NEARLY CERTAIN									
	HIGHLY LIKELY									
	LIKELY									
	UNLIKELY									
	REMOTE									
Benefit/Consequences		GREAT	HIGH	FAIR	SLIGHT	NEUTRAL	MINOR	MODERATE	SERIOUS	CRITICAL

 & Blue ratings justify major investment of resources & effort
 & White ratings justify secondary consideration
 Green ratings are low priority (track but leave alone)
 Probability = odds of achieving opportunity or risk occurring

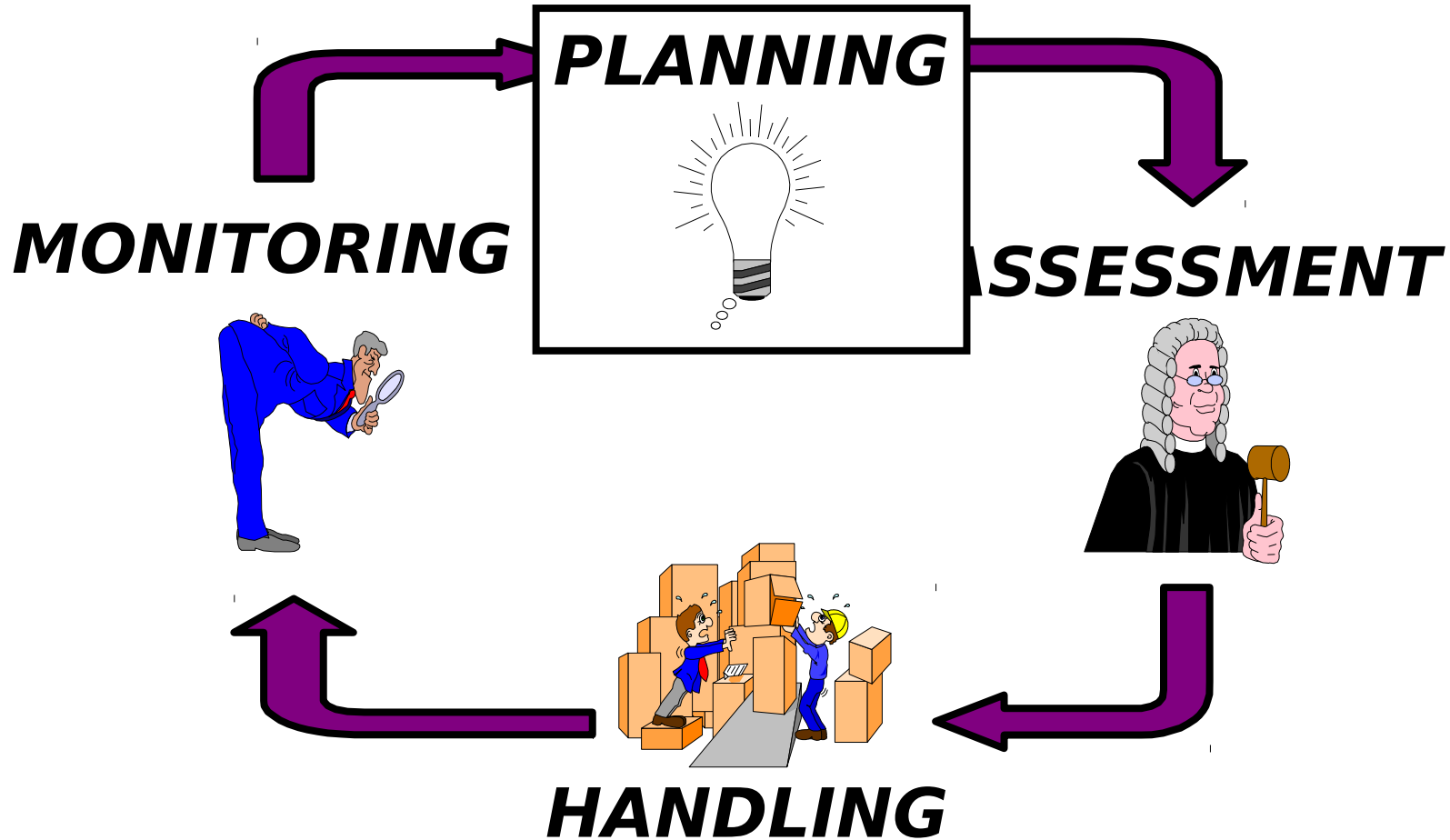


ACQUISITION RISK -- DEFINITION

- A Measure of Potential Inability to Achieve Defined Program Cost / Schedule / Performance **GOALS**
- Each Risk (Risk Event) Has 2 Components:
PROBABILITY -- Event Will Occur
CONSEQUENCES -- Adverse Impact to Program



RISK MANAGEMENT MODEL*



* DoD/DAU Risk Guidebook

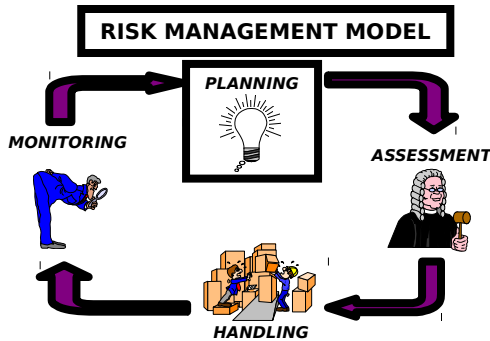
RISK MANAGEMENT IN INTEGRATED PRODUCT & PROCESS (IPPD) ENVIRONMENT



- Empowerment -

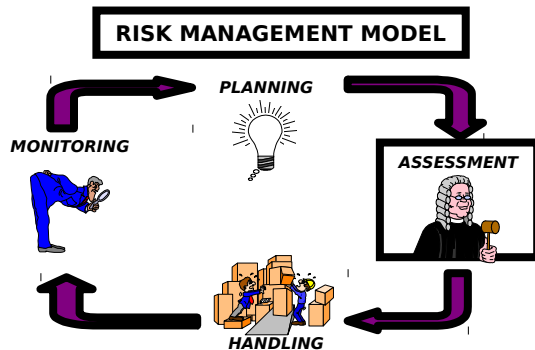
“The team should be given the authority, responsibility, & resources to manage its product & its risk commensurate with the team’s capabilities.

- The authority of team members needs to be defined & understood by the individual team members.**
- The team should accept responsibility & be held accountable for the results of its efforts.”**



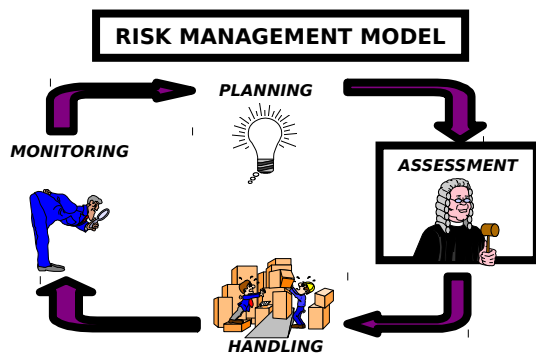
RISK PLANNING

- Develop an Organized, Comprehensive, & Iterative Approach for an Effective Acquisition Risk Management Program
- Train ALL IPT Members in Risk Management Processes
- Assign Responsibility and Authority to Team Members at appropriate levels
- Create a Risk Coordinator to look across entire program
- Develop a Management Information System (MIS)
- Draft a Risk Management Plan (Documentation)
- Finalize the plan and implement across the



RISK ASSESSMENT

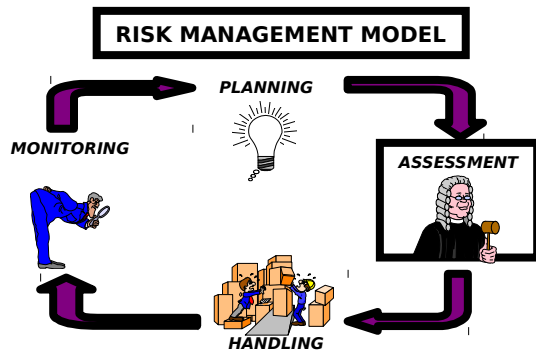
- Identification of Risk Events
- Analysis of Probability & Consequence
- Priority of Risk Events for Handling



RISK ASSESSMENT

(Sub-process:
Identification)

- What Are the Risk Events in the Program?
 - Known / Knowns
 - Known / Unknowns
 - Unknown / Unknowns
- Where Are Risk Events Located in the Program?
 - Requirements, Technology, Design, T&E, M&S, Cost, Schedule, etc.
- Examine Sources/Areas of Risk to Determine Risk Events

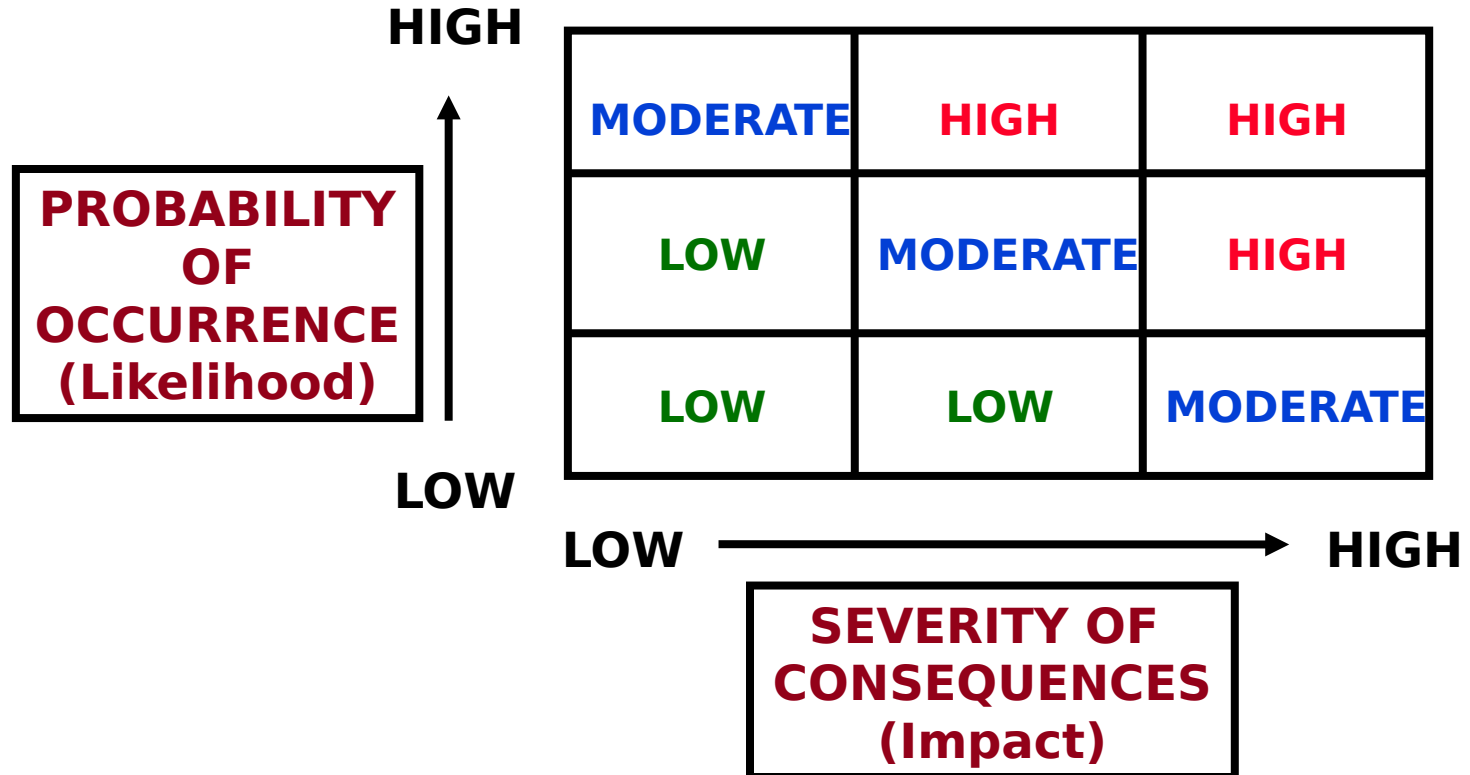


RISK ASSESSMENT

(Sub-process: Analysis)

- Description of Risk **Event** (What Could Go Wrong?)
- Isolate the **Cause** of Risk Event
- Determine the **Probability & Impact** of Risk Event
- Use Prob & Impact to determine **High**, **Medium**, & **Low** Risk Ratings?
 - Apply Generic Risk Assessment **Matrix** to Rate/Prioritize Risk Events
 - Tailor Prob, Impact **metrics/axes** to the Product or Process
 - Measure Risk **Impact** on Cost, Schedule, & Prof

GENERIC RISK ASSESSMENT MATRIX

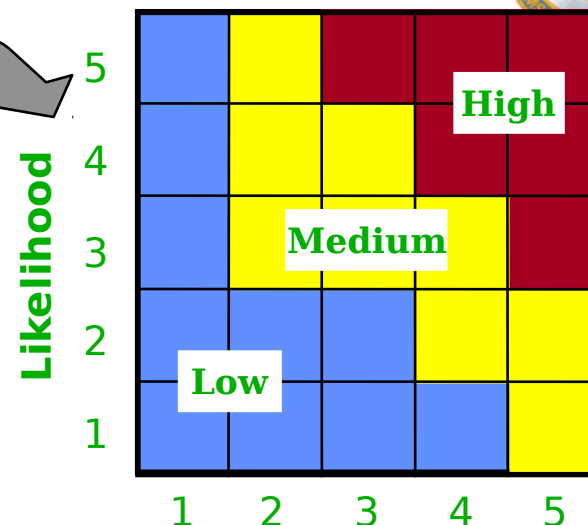




F/A-18 Program Risk Analysis

What Is the Likelihood the Risk Will Happen?

Level		Your Approach and Processes...
1	Not Likely: ...	Will effectively avoid or mitigate this risk based on standard practices
2	Low Likelihood	Have usually mitigated this type of risk with minimal oversight in similar cases
3	Likely: ...	May mitigate this risk, but workarounds will be required
4	Highly Likely:..	Cannot mitigate this risk, but a different approach might
5	Near Certainty	Cannot mitigate this type of risk; no known processes or workarounds are available



Given risk is realized, what would be the magnitude of the impact?

Level	Technical	Schedule	Cost
1	Minimal or no impact	Minimal or no impact	Minimal or no impact
2	Minor perf shortfall, same approach retained	Additional activities required; able to meet key dates	Budget increase or unit production cost increase <1%
3	Mod perf shortfall, but workarounds available	Minor schedule slip; will miss need date	Budget increase or unit production cost increase <5%
4	Unacceptable, but workarounds available	Program critical path affected	Budget increase or unit production cost increase <10%
5	Unacceptable; no alternatives exist	Cannot achieve key program milestone	Budget increase or production cost increase >10%

Questions about Risk Management?
Call a member of the Risk Mgmt Team

Willie Smith 703-604-2210 x7418
John Hayn 314-234-9738
Ruben Garcia 314-233-6315
Jim Warren 314-234-8754
Ron Morris 310-332-8050
Vic Santos 617-594-5930
Pam Barber 703-413-7264



**Call a Member of the
Process Integration
Team for Risk.**

Level The Probability Happen?	What Is The Risk Will
-------------------------------------	--------------------------

Consequence:

Given The Risk is Realized, What is the Magnitude of the Impact?

RISK ASSESSMENT

 required.

 **MODERATE** - Some disruption. Different approach may be required. Additional management attention may be needed.

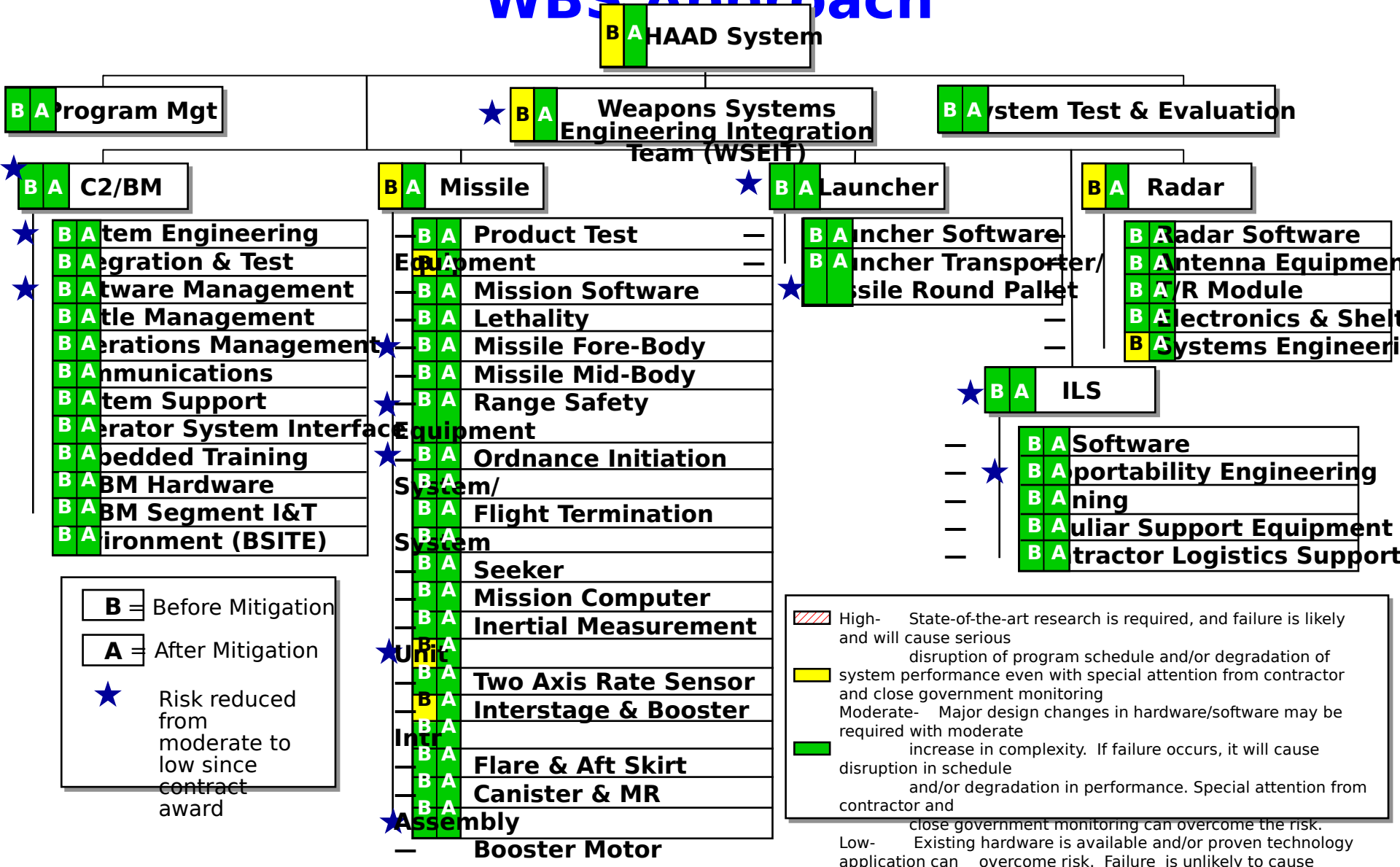
LOW - Minimum impact. Minimum oversight needed to ensure risk remains

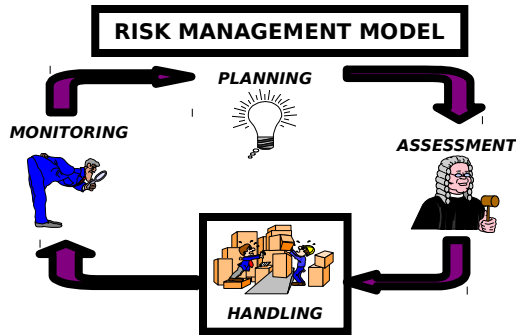
Level	Technical and/or Performance	Cost and/or Schedule	Low. Impact on Other
1	Minimal or No Impact	Minimal or No Impact	None
2	Some Impact	Acceptable with Some Reduction in Margin ≤ 5%	Additional Resources Able to Meet Need
3	Key Milestone; Moderate Impact	Acceptable with Significant Reduction in Margin 5 - 7%	Minor Slip in Not Able to Meet Need
4	Key Milestone Major Impact	Acceptable, No Remaining Margin > 7 - 10%	Major Slip in or Critical Path Impacted



THAAD Program Risk Assessment (U)

“WBS Approach”





RISK HANDLING

CAAT

CONTROL: Reduce Probability &/or Impact
(In-Process Reviews)

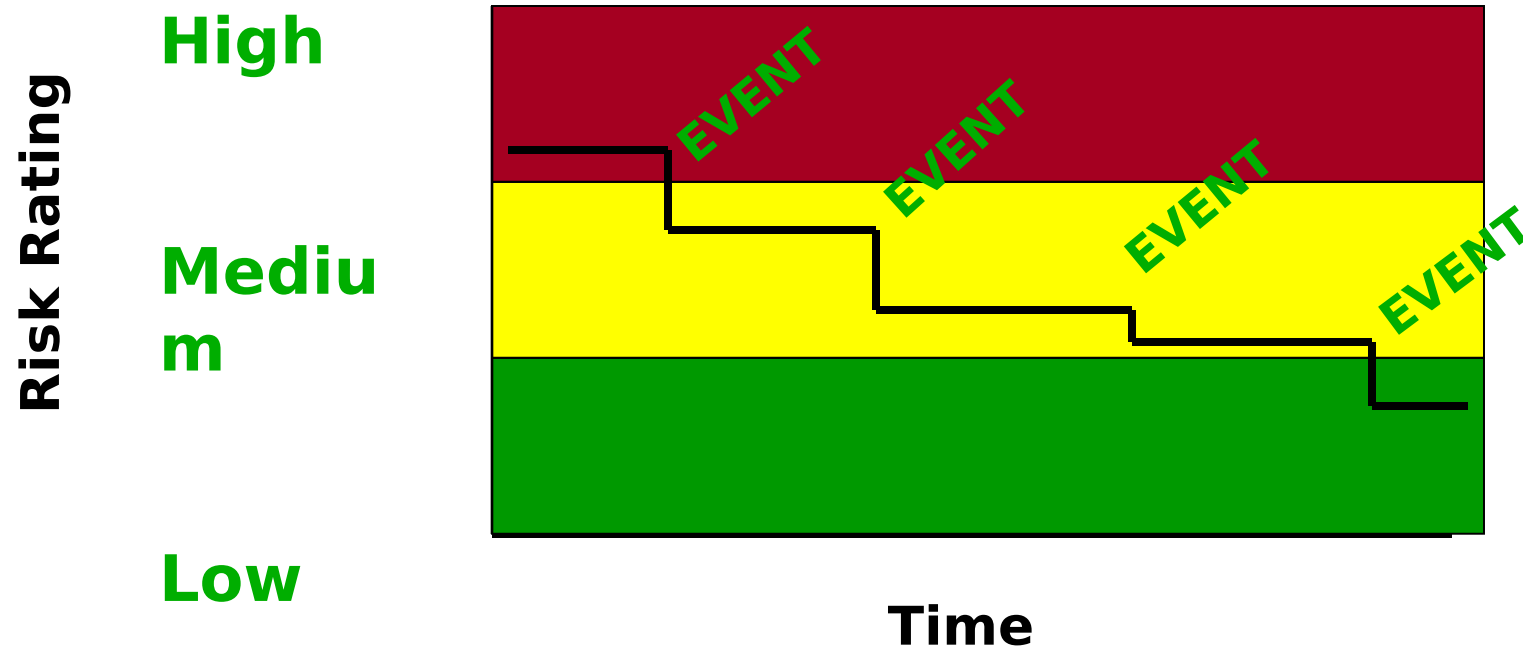
AVOID: Use Another Path
(Redesign, Eliminate Req, Change Schedule)

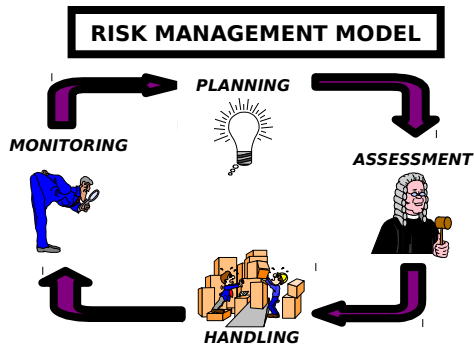
ASSUME: Make No Changes
(Mgmt/Risk Reserve = \$ & Sch)

TRANSFER: Reduce Impact
(Warranties, FP Contracts, Insurance)



Risk Handling Plan “Waterfall”





RISK MONITORING

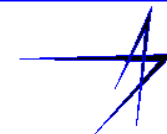
- **Related to Earned Value Measurement & Program Control** (Cost, Schedule, & Performance Measurement Reports)
- **Track & Evaluate Handling/Mitigation of Risk Events**
- **Consolidated Acquisition Reporting System (CARS)**
 - Acquisition Program Baseline (APB)
 - Defense Acquisition Executive Summary (DAES)/Unit Cost Reports (UCR)
 - Selected Acquisition Report (SAR)



Risk Title: **DACS DCS Thruster Redesign**

LMMS ID No.: **631**

Missile Segment: **Missile**



Risk Description:

Divert Control System (DCS) thruster design engineering testing indicated combustion instability. Risk is number of design iterations required to tune acoustical cavities for MON-25 DCS design.

Potential Impact:

Schedule and cost impacts associated with achieving technical requirements.

Mitigation Planning and Status

Step	Completion Dates		Step %
	Estimated	Actual	
1 Begin fault tree analysis	03/30/03	03/02/03	1
2 Perform MON-10 to gain insight	04/25/03	04/25/03	1
3 Define cavity modifications	04/30/03	04/30/03	1
4 Modify injectors for retests	05/10/03	05/10/03	1
5 Develop test plan with various cavity sizes	05/17/03	05/13/03	1
6 Perform DCS test with 0.365 cavities	05/29/03	05/21/03	5
7 Perform DCS test with 0.400 cavities	06/12/03	06/09/03	5
8 0.400 Equivalent cavity test results review	06/20/03	06/20/03	5
9 Perform DCS test with 0.280 cavities	06/30/03	06/27/03	5
10 Investigate 0.400 equivalent cavity 27 kHz response	07/08/03	07/08/03	5
11a Initial Large Open Area Bi/Tri-tuned testing	09/09/03	09/08/03	10
11b Perform lower MON levels survey	09/30/03		15
11c ACS look-a-like testing	10/30/03		15
11d Center Core DCS testing	11/17/03		15
12 Execute backup plan, if required	11/20/03		15

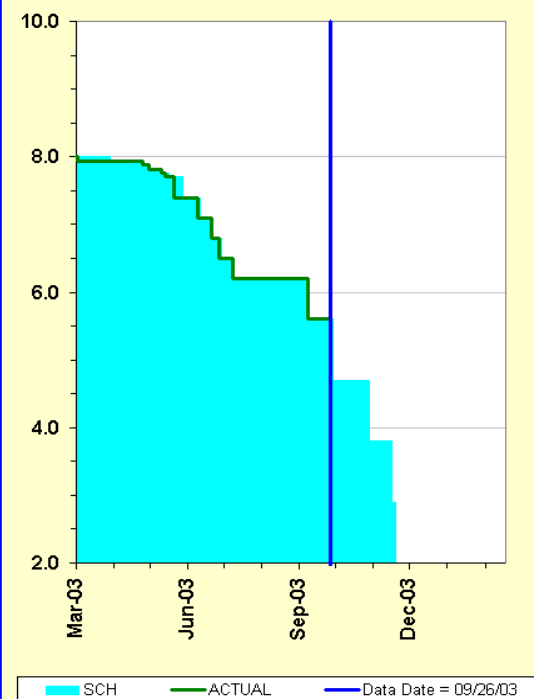
Closure Criteria:

DACS prototype test demonstrates combustion stability

Retirement Justification:

Risk Areas	Complexity Factor	Program Risk Rating	
Technology		MODERATE	
Design & Eng	7		
Performance	8		
Manufacturing			
Supportability		Overall CF	
Schedule	6	Original	Current
Cost	6	8.0	5.6

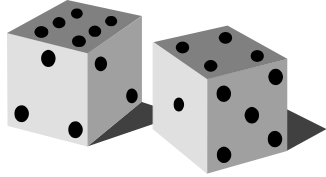
Risk Reduction Schedule



Responsible Risk POC: John Shoults - (408) 743-0949



RISK **MANAGEMENT** **SUMMARY**



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Risk Management must be integrated into the organization's routine processes

WEB-BASED RISK MANAGEMENT



- **Risk Management Guide June 2003**
 - www.dau.mil/pubs/gdbks/risk_management.asp
- **Risk Management Community of Practice**
(PMCoP) - Part of Acquisition Community Connection (ACC)
 - <http://acc.dau.mil>
- **Textbook - “Managing Risk in Organizations”** by J.Davidson Frame; published by Jossey-Bass, 2003
- **Risk Management Learning Module**
 - http://clc.dau.mil/kc/no_login/portal.asp